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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/664,993 09/18/00 CAI

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EXAMINER

IM52/1107

WILLIAMS MORGAN & AMERSON PC
7676 HILLMONT
SUITE 250
HOUSTON TX 77040

NOLAN, S

ART UNIT

PAPER NUMBER

1772

DATE MAILED:

11/07/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application N .

09/664,993

Applicant(s)

CAI ET AL.

Examiner

Sandra M. Nolan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 4, 6. 6) ☐ Other: .

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements submitted on December 15, 1999, November 20, 2000 and January 31, 2001 (Paper Nos. 3, 4, and 6, respectively) were considered by the examiner. Copies of the initialed form PTO 1449's are enclosed.

Claims

2. Claims 1-17 are pending.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are indefinite as follows:

A. In claim 1, lines 5+, Applicants describe the combination of (a), (b) and (c) as a "composition". However, (a) and (b) appear to be features of one molecular species. Please clarify/correct.

B. In claim 7, Applicants refer to each of the polymers listed as a "composition". The terms "copolymer" and "terpolymer" would be more accurate. Please clarify/correct.

Claim Rejections - 35 USC § 103

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Note: In the following rejections, the terms "container" and "package" are used interchangeably, as are the terms "oxidizable and "oxygen scavenging".

7. Claims 1-12 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ching (US 5,744,246) in view of Nordstrom (US 3,536,687).

Ching teaches oxygen scavenging constructs having the oxygen scavenging material (C) between two layers of barrier polymer (B) (See Figure 1). The oxygen scavenging material contains a polymer having oxidizable sites and a transition metal salt (col. 4, lines 44-46). Cobalt is a useful metal (col. 9, line 30). The barrier material is polyethylene terephthalate (col. 6, lines 23-24). The constructs are used for food packages (col. 8, line 44) and may be activated (col. 9, line 67).

Ching does not teach the particular oxygen scavenging polymers recited in Applicants' claims 1, 3, 4, 5, 6, or 7; the tie layers of claim 9; the organic cobalt salts of claim 12; or the (types of) drinks recited in claims 16 and 17.

Nordstrom teaches the production of oxidizable copolymers (col. 1, lines 49-52) from monomers containing Applicants' cyclohexenyl and linking moieties (see col. 2, Formula VIII); and various unsaturated monomers, such as methyl (meth)acrylate (col. 3, lines 3 and 4). The copolymers are oxidizable at ambient temperatures (col. 1, lines 49-52).

The chemical limitations of Applicants' claims 1, 3, 5, and 6 are met by formula VIII of Nordstrom because the formula includes a $-(C=O)-O-(CHR)_n-$ linkage and a pendant cyclic group.

Ching and Nordstrom are analogous because both deal with oxidizable polymers.

It would have been obvious to one having ordinary skill in the art at the time that the invention was made to employ the copolymers of Nordstrom as the oxygen scavenging polymers in the constructs of Ching in order to produce packaging in which the oxidizable material is reactive at ambient temperatures.

The motivation to employ the copolymers of Nordstrom in the constructs of Ching is found at col. 1, lines 49-52 of Nordstrom, where the ambient temperature reactivity of the Nordstrom copolymers is taught. It is deemed desirable to produce oxygen scavenging packaging, such as that of Ching, in which the oxidizable material is reactive at ambient temperature so that heat or other energy-based treatments need not be used to activate the scavenging reaction.

The Examiner deems ethylene to be a conventional monomer in acrylate copolymers, such as those of Nordstrom. Therefore, in the absence of convincing objective evidence to the contrary, the use of ethylene-containing acrylate copolymers [per Applicants' claim 7], as the copolymers of Nordstrom and the employment of same in the constructs of Ching is deemed a matter of engineering choice.

The Examiner deems tie layers to be conventional in multiplayer constructs. Therefore, in the absence of convincing objective evidence to the contrary, the use of tie layers [per Applicants' claim 9] to enhance the adhesion of layers within the constructs suggested by the combination of the teachings of Ching and Nordstrom would be a matter of engineering choice.

The Examiner deems organic salts of cobalt to be equivalent as sources of cobalt ions for catalyzing the oxygen scavenging properties of oxidizable polymers. Therefore, in the absence of convincing objective evidence to the contrary, the use of the organic cobalt compounds of Applicants' claim 12 to catalyze the oxygen scavenging reactions in the constructs resulting from the combination of the teachings of Ching and Nordstrom would be a matter of engineering choice.

The use of the containers suggested by the combined teachings of Ching and Nordstrom to house any liquid that is known to be subject to oxidative degradation [per Applicants' claims 16 and 17] would be an obvious matter of choice.

Also, the selection of the drinks to be packaged [per Applicants' claims 16 and 17] in containers suggested by the combined references is a matter of intended use. It has been held that a recitation with respect to the manner in which a claimed invention

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is intended to be employed does not differentiate the claimed invention from prior art satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

8. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ching and Nordstrom as applied to claims 1-12 and 16-17 above, and further in view of Katsumoto et al (US 6,139,770).

Ching and Nordstrom are discussed above. They do not teach the use of a "triggering material", such as a photoinitiator, in their oxidizable materials.

Katsumoto et al teaches that photoinitiators may be used to initiate the oxygen scavenging properties of oxygen scavenging compositions (col. 2, lines 54+). The photoinitiators are said to be useful with oxidizable polymers (col. 6, lines 58+) and are UV absorbent at 200 to 400 nm (col. 3, lines 66-67).

The cited references are analogous because they all deal with oxidizable polymers.

It would have been obvious to one having ordinary skill in the art at the time that the invention was made to employ the photoinitiators of Katsumoto et al in the constructs suggested by the combination of the Ching and Nordstrom teachings in order to activate the oxygen scavenging properties of the constructs.

The motivation to employ the photoinitiators of Katsumoto et al in the constructs suggested above is found at col. 2, lines 54+ of Katsumoto et al, where the use of the photoinitiators to activate oxygen scavenging compositions is taught. It is deemed desirable to employ activated oxygen scavenger-containing constructs in packaging in

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order to insure that the contents of the packaging will be protected from oxidation products that might adversely affect the properties, e.g., the taste of the contents.

Conclusion

Any inquiry concerning this communication should be directed to the Examiner, Sandra M. Nolan, whose telephone number is 703/308-9545. The Examiner can normally be reached on Monday through Thursday, from 6:30 am to 4:00 pm, Eastern Time.

If attempts to reach the Examiner by telephone are unsuccessful, her supervisor, Harold Pylon, can be reached at 703/308-4251. The general fax number for the art unit is 703/305-5436. The fax number for after final communications is 703/872-9310. The receptionist answers 703/308-0661.



S. M. Nolan
Patent Examiner
Technology Center 1700

SMN/smn
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